

# ENF Environmental Notification Form

*For Office Use Only*  
*Executive Office of Environmental Affairs*

EOEA No.: 14030  
 MEPA Analyst: Aisling Eglinton  
 Phone: 617-626-1024

The information requested on this form must be completed to begin MEPA Review in accordance with the provisions of the Massachusetts Environmental Policy Act, 301 CMR 11.00.

<b>Project Name: Installation of Line 134 and Substation Improvement - Carver, Middleborough, Rochester and Wareham (within existing ROW)</b>		
Street: <u>N/A</u>		
Municipality: <u>Carver, Middleborough, Rochester, Wareham</u>	Watershed: <u>Buzzards Bay</u>	
Universal Transverse Mercator Coordinates: Start: 19 351536E, 4639661N End: 19 353227E, 4629131N Middle 1: 19 352287E, 4637619N Middle 2: 19 350316E, 4631803N	Latitude/Longitude Start: 41 18 49.609S, 70 47 20.945S End: 41 48 09.066S, 70 45 57.003S Middle 1: 41 52 43.956S, 70 46 47.486S Middle 2: 41 49 34.177S, 70 48 06.243S	
Estimated commencement date: <u>10/07</u>	Estimated completion date: <u>12/08</u>	
Approximate cost: <u>\$20,000,000</u>	Status of project design: <u>50 % complete</u>	
Proponent: <u>NSTAR Electric (NSTAR)</u>		
Street: <u>One NSTAR Way, Mailstop NE 320</u>		
Municipality: <u>Westwood</u>	State: <u>MA</u>	Zip Code: <u>02090</u>
Name of Contact Person From Whom Copies of this ENF May Be Obtained: <u>Colin Duncan</u>		
Firm/Agency: <u>TRC Environmental Corp.</u>	Street: <u>650 Suffolk Street</u>	
Municipality: <u>Lowell</u>	State: <u>MA</u>	Zip Code: <u>01854</u>
Phone: <u>978-656-3615</u>	Fax: <u>978-453-1995</u>	E-mail: <u>cduncan@trcsolutions.com</u>

- Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)?  
 Yes  No
- Has this project been filed with MEPA before?  
 Yes (EOEA No. \_\_\_\_\_)  No
- Has any project on this site been filed with MEPA before?  
 Yes (EOEA No. 6273)  No
- Is this an Expanded ENF (see 301 CMR 11.05(7)) requesting:
- a Single EIR? (see 301 CMR 11.06(8))  Yes  No
  - a Special Review Procedure? (see 301 CMR 11.09)  Yes  No
  - a Waiver of mandatory EIR? (see 301 CMR 11.11)  Yes  No
  - a Phase I Waiver? (see 301 CMR 11.11)  Yes  No

Identify any financial assistance or land transfer from an agency of the Commonwealth, including the agency name and the amount of funding or land area (in acres): None

Are you requesting coordinated review with any other federal, state, regional, or local agency?  
 Yes (Specify \_\_\_\_\_)  No

List Local or Federal Permits and Approvals: Orders of Conditions from local Conservation Commissions - Carver, Middleborough, Rochester and Wareham; potential review by local planning/zoning to be determined in consultation with local Planning Board and pending the receipt of state approvals.

Which ENF or EIR review threshold(s) does the project meet or exceed (see 301 CMR 11.03):

- |                                 |  |  |
|---------------------------------|--|--|
| <input type="checkbox"/> Land   | <input checked="" type="checkbox"/> Rare Species | <input checked="" type="checkbox"/> Wetlands, Waterways, & Tidelands |
| <input type="checkbox"/> Water  | <input type="checkbox"/> Wastewater              | <input type="checkbox"/> Transportation                              |
| <input type="checkbox"/> Energy | <input type="checkbox"/> Air                     | <input type="checkbox"/> Solid & Hazardous Waste                     |
| <input type="checkbox"/> ACEC   | <input type="checkbox"/> Regulations             | <input type="checkbox"/> Historical & Archaeological Resources       |

Summary of Project Size & Environmental Impacts	Existing	Change	Total	State Permits & Approvals
<b>LAND</b>				<input checked="" type="checkbox"/> Order of Conditions <input type="checkbox"/> Superseding Order of Conditions <input type="checkbox"/> Chapter 91 License <input checked="" type="checkbox"/> 401 Water Quality Certification <input checked="" type="checkbox"/> MHD or MDC Access Permit* <input type="checkbox"/> Water Management Act Permit <input type="checkbox"/> New Source Approval <input type="checkbox"/> DEP or MWRA Sewer Connection/Extension Permit <input checked="" type="checkbox"/> Other Permits (including Legislative Approvals) – Specify:  <u>MA DPU Section 72 Petition</u> <u>MA DPU Zoning Exemption</u> <u>under G.L. c. 40A, § 3</u>  * MHD road crossing approval (Route 495)
Total site acreage	161 (ROW)			
New acres of land altered		2.6		
Acres of impervious area	5 ± (roads)	0	5 ± (roads)	
Square feet of new bordering vegetated wetlands alteration		191,940 <sup>1</sup> Temporary		
Square feet of new other wetland alteration		0		
Acres of new non-water dependent use of tidelands or waterways		0		
<b>STRUCTURES</b>				
Gross square footage	130,374 <sup>2</sup>	117,058	247,432	
Number of housing units	0	0	0	
Maximum height (in feet)	80	0	80	
<b>TRANSPORTATION</b>				
Vehicle trips per day	15 <sup>3</sup>	0	0	
Parking spaces	0	0	0	
<b>WATER/WASTEWATER</b>				
Gallons/day (GPD) of water use	0	0	0	
GPD water withdrawal	0	0	0	
GPD wastewater generation/treatment	0	0	0	
Length of water/sewer mains (in miles)	0	0	0	

<sup>1</sup>Temporary impacts associated with swamp mats used for access to poles; areas to be restored.

<sup>2</sup>Existing structures include expansion of the substation and steel tubular poles associated with the existing transmission lines.

<sup>3</sup>Temporary construction trips only; no permanent daily vehicle trips associated with project.

**CONSERVATION LAND:** Will the project involve the conversion of public parkland or other Article 97 public natural resources to any purpose not in accordance with Article 97?

Yes (Specify \_\_\_\_\_ )  No

Will it involve the release of any conservation restriction, preservation restriction, agricultural preservation restriction, or watershed preservation restriction?

Yes (Specify \_\_\_\_\_ )  No

**RARE SPECIES:** Does the project site include Estimated Habitat of Rare Species, Vernal Pools, Priority Sites of Rare Species, or Exemplary Natural Communities?

Yes (Specify: PH 757 and PH 756)  No

**HISTORICAL /ARCHAEOLOGICAL RESOURCES:** Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

Yes (Specify: Archaeological sites identified along ROW 240 (MHC File #6834) in 1992/1993)  No

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources?

Yes (Specify \_\_\_\_\_ )  No

**AREAS OF CRITICAL ENVIRONMENTAL CONCERN:** Is the project in or adjacent to an Area of Critical Environmental Concern?

Yes (Specify \_\_\_\_\_ )  No

**PROJECT DESCRIPTION:** The project description should include (a) a description of the project site, (b) a description of both on-site and off-site alternatives and the impacts associated with each alternative, and (c) potential on-site and off-site mitigation measures for each alternative (*You may attach one additional page, if necessary.*)

NSTAR Electric Company ("NSTAR Electric" or the "Company") plans to construct and operate a new 115kV overhead electric transmission circuit, to be known as "Line 134", from NSTAR's Carver Substation site to the Tremont Substation ("Tremont") in Wareham, MA, along an existing right-of-way ("ROW"), number 240 through the towns of Carver, Middleborough, Rochester and Wareham. NSTAR Electric, working with the New England Independent System Operator ("ISO"), has developed a coordinated plan of line and station upgrades to increase the ability of the transmission system to import power. The new line will allow for greater reliability for NSTAR customers in the vicinity of the Substation and to increase the power import capability to the Southeastern Massachusetts area.

NSTAR will file a petition under G.L. c. 164, § 72, with the Massachusetts' Department of Public Utilities ("DPU") in support of this project which is required by the ISO. Zoning relief will also be requested from the DPU for the expansion of the Carver Substation fence line under G.L. c. 40A, § 3.

The existing 3-acre Carver Substation sits on a 12-acre property on the westerly side of Main Street (Route 58) in the Town of Carver. The Carver Substation fence line will be expanded by approximately 2.6 acres to make way for new electrical equipment required for the new line. NSTAR Electric proposes to construct, maintain and operate an expansion of the Carver Substation and to place Line 134 in a spare position on a set of existing structures. NSTAR Line numbers 127 and 128 already exist on different portions of this set of structures on ROW # 240.

ROW 240 consists of a 150 to 160 foot wide transmission and distribution corridor extending south from the Carver Substation through Carver and Middleborough to Interstate Route 495, then in a southeasterly direction roughly parallel to Rt. 495 and crossing it once, and terminating at Tremont. The ROW crosses mostly undeveloped tracts of land, including forested areas (except for the ROW itself), large wetlands, actively farmed cranberry bogs, light residential and industrial areas, and local and state roads.

Changes to the Carver Substation will include reconfigured 345 kV and 115 kV facilities, construction of two new "tap" lines connecting an existing 345 kV line to the Carver Substation, and construction of Line 134. Line 134 will terminate in an existing spare 115 kV circuit position at Tremont.

Line 134 will be installed on the open side of the existing double-circuited steel tower line that runs from the Carver Substation to Tremont. The general location, layout, dimensions and configuration of the proposed expanded substation are shown on the attached plan. Line 134 will be constructed in general accordance with the additional plans and elevations currently being developed. The work on the right-of-way will include stringing new electric conductor on existing steel structures. Because vehicle access to the structures will be required, temporary fill (crushed stone and/or timber mats) will be placed in wetland resource areas. In addition, temporary wood "rider" poles will be placed at roadway

crossings to assure the lines do not drop to the road during pulling. A set of the original line plans associated with the Lines 127 and 128 project, which include the layout of roads to be utilized for access to the existing structures for installation of Line 134, has been included in this ENF document. Note that line and substation plans have not been released to general public due to Homeland Security Presidential Directive HSPD-7 and the Homeland Security Act of 2002 created the National Infrastructure Protection Plan).

The Company considered several discrete alternatives to the construction of Line 134 (Alternative 1). The other 115kV option, Alternative 2, would require 18 to 25 miles of new construction on new structures and various additional switching stations, bus work, and a new switching station in the Myles Standish State Forest. For this alternative, three existing 345 kV lines would be routed into and out of the facility, requiring additional circuit positions. Existing Line 355 runs from Pilgrim to National Grid's Bridgewater Substation. It shares the ROW and tower line with Line 342 between Pilgrim and the transition location in the middle of the Myles Standish State Forest. It is on a separate tower line from the Myles Standish junction running west past the Carver substation to Bridgewater. The transmission junction has no circuit breakers and has insufficient space to accommodate the installation of breakers. A new switching station would be required to be located adjacent to the existing junction. This would require the acquisition of 2.5 acres of land within the State Forest, requiring at the minimum, an act of the Legislature pursuant to Article 97 of the Massachusetts Constitution. The switching station would also require station service power. Over two miles of distribution 24 kV line would need to be extended to the site from Long Pond Road to supply the station service transformers. The process of acquiring and clearing the site would be complex and would take at least one to two years. This would put this alternative at least a year behind the Alternative 1 proposal. Moreover, starting with an undeveloped site would add several million dollars to the project. The switching station development alone would cost in excess of \$15 million. However, since there is no 115 kV infrastructure at this site to benefit from a 345/115 kV autotransformer, this alternative would still result in the need for a second autotransformer at the Carver Substation and an additional 115 kV line from Carver to Tremont, as in Alternative 1. Therefore, approximately \$11 million of the costs of Alternative 1 would still be required if Alternative 2 were pursued, bringing the cost of this alternative to approximately \$26 million.

Alternative 3 would require the transmission of 345 kV supply into the Carver/Tremont area from another direction, i.e. from Brayton Point (Somerset). The approximate distance from Brayton Point to Tremont substation is 28 miles. This would use the existing ROW that presently carries 115 kV lines. It may require widening the ROW and, potentially, routing the line within the ROW east of Fall River (perhaps 3 miles) underground and/or underwater. The use of monopole construction for the overhead portion (if it could be accommodated on the existing ROW) and a single circuit of underground/underwater cable for the first three miles would bring the line cost alone to about \$54 million. This alternative would also require the construction of new 345 kV termination switching facilities and an autotransformer adjacent to Tremont. The existing site is not large enough to accommodate this addition, so property would need to be acquired nearby. The terminating station would cost on the order of \$15 million, bringing the total rough estimated cost of this alternative to \$69 million. Tremont substation was considered as an interconnection point because, within Lower SEMA, it is the first major convergence of 115 kV transmission east of Brayton Point. One advantage of this alternative is that it would create geographic diversity for area supply. However, it would take several years longer to license and construct than Alternative 1. It would require a new 345 kV termination substation at Tremont and, with an underground/underwater section, line costs would be much higher than Alternative 1. This alternative remains a long-term option, but will not be able to produce rapid results.

Alternative 4 would create a new 345 kV substation adjacent to the ROW that carries Lines 355 and 342 near the Manomet Substation (about 3 miles west of the Pilgrim Nuclear Power Station). Line 355 or Line 342 would be looped into this new substation with a 345/115 kV autotransformer. Again, a site would need to be acquired and developed as in Alternative 3. This would be on the order of \$15 million. The Manomet Substation would require expansion (additional land) and 115 kV ties would be installed between the Manomet Substation and the new 345 kV substation. The Manomet Substation, which presently has no 115 kV circuit breakers, would need to be expanded to at least a six breaker ring bus, costing approximately \$3 million. The 12-mile Line 108 from Manomet to Horse Pond Tap is the only 115 kV circuit in the area. The existing structures of Line 108 would need to be removed and replaced with either larger double circuit structures or two tower lines. The work would be further complicated by the need to remove the 23 kV line that is also on that tower line while continuing to serve local load. A second 115 kV line would be needed to support the autotransformer. The total 115 kV line development cost would be approximately \$18 million, bringing the estimated cost of the fourth alternative to \$36 million. The construction work to rebuild Line 108 would start after the construction of the 345 kV substation and 115 kV tie to Manomet is completed, because Line 108 line is presently the only 115 kV supply to the Manomet Substation. This would delay the in-service date for this alternative.

The Company also considered the alternative of not expanding its existing Carver Substation (the "No-Build Alternative"). If the Company opted for the No-Build Alternative, the maintenance, reliability and capacity needs described previously would not be addressed, which would continue to expose the 115 kV system to vulnerabilities relating to maintenance and outages, higher costs to customers and would not address the need for additional load flow into Southeastern Massachusetts. Accordingly, the Company determined that the No-Build Alternative was not feasible.

Among these options, the Company determined that Alternative 1, installing a second Carver Substation 345/115 autotransformer, and installing a new 115 kV line from the Carver Substation to Tremont, is the preferred alternative. This preferred alternative is the least costly and complex alternative, minimizes environmental impacts and requires the least time to construct.